

REMARKS

An Office Action was mailed on November 23, 2004. Claims 1 - 19 are pending in the present application. With this Response, Applicants propose revisions to FIGs. 1 and 2, and amend claims 1, 3, 11, 16 and 19 to further clarify the nature of their invention and to address informalities. No new matter is introduced. Support for the amendments may be found, for example, at page 13, line 17 – page 14, line 2 of Applicants' specification.

ALLOWED CLAIM

Applicants thank the Examiner for indicating that claim 10 is currently allowed.

OBJECTED CLAIMS

Applicants thank the Examiner for indicating that claims 3 – 5, 8, 9, 13 – 15, 17 and 18 are each objected to as being dependent on a rejected base claim, but that each would be allowable if rewritten to include the limitations of its associated base claim and any intervening claims. Claims 3 – 5, 8 and 9 depend from rejected base claim 1, and claims 13 – 15, 17 and 18 depend from rejected base claim 11. Applicants amend claim 3 to indicate that the output numerical aperture referenced is the output numerical aperture of the optical fibers. Applicants also amend independent claims 1 and 11, and for the reasons cited below, respectfully suggest that amended independent claims 1 and 11 are currently allowable. For at least this reason, Applicants further submit that claims 3 – 5, 8, 9, 13 – 15, 17 and 18 are also allowable, and respectfully request that the objections be withdrawn.

OBJECTION TO DRAWING

The drawing is objected to. Specifically, the Examiner finds that FIGs. 1 and 2 should be revised to each include the legend “Prior Art”. Applicants submit revised drawing sheets for FIGs. 1 and 2, in marked-up and clean form, revising FIGs. 1 and 2 to each include the legend “Prior Art”. Accordingly, Applicants respectfully request that the revisions be accepted, and that the objection be withdrawn.

REJECTION UNDER 35 U.S.C. § 112

Claims 16 is rejected under the second paragraph of 35 U.S.C. § 112 as being indefinite. Specifically, the Examiner finds that the term "said pre-exposure calibration" lacks antecedent basis. Applicants amend claim 16 to depend from claim 13 rather than claim 12. Claim 13 introduces the term "pre-exposure calibration". Accordingly, Applicants respectfully request that the rejection under the second paragraph of 35 U.S.C. § 112 be withdrawn.

REJECTION UNDER 35 U.S.C. § 103

Claims 1 and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicants' admitted prior art (AAPA) in view of U.S. Patent No. 5,745,153 to Kessler et al. Claims 6, 7, 11, 12 and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over AAPA in view of Kessler and U.S. Patent No. 5,808,657 to Kurtz et al. Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over AAPA in view of Kessler and U.S. Patent No. 5,414,561 to Wakimoto et al.

Applicants amend independent claims 1, 11 and 19 to further clarify the nature of their invention, and respectfully traverse these rejections.

In amended independent claim 1 X, for example, Applicants disclose:

1. An imaging apparatus comprising:

a drum for mounting an IR sensitive printing member on a surface thereof, said drum being capable of rotating about a longitudinal axis thereof to affect interline exposure of said printing member with the information representing said image;

a plurality of IR laser diodes, each coupled to a corresponding optical fiber, the optical fibers are aligned at a distance from an exposure surface of the IR sensitive printing member and providing an output light beam; and

a stationary telecentric lens assembly which operates to image said output light beam onto said exposure surface;

whereby a lateral distance between first and second exposure spots of the output light beam on the exposure surface is invariant with a change in the distance of the optical fibers from the exposure surface, wherein the change in the distance of the optical fibers from the exposure surface is within a predetermined range.

AAPA discloses an imaging apparatus including a drum for mounting an IR sensitive printing member, a plurality of IR laser diodes each coupled to a corresponding optical fiber, and a lens assembly for outputting an output light beam of the optical fibers (see, e.g., FIGs. 1, 2 of AAPA).

With respect to AAPA, the Examiner acknowledges that AAPA fails to teach or suggest that the lens assembly is a stationary telecentric lens assembly. The Examiner however suggests that AAPA may be combined with Kessler to teach such a combination. Applicants respectfully disagree.

Kessler discloses an optical assembly for use in conjunction with a mutibeam printer/recorder (see, e.g., abstract of Kessler). The Examiner notes that the optical assembly of Kessler includes a telecentric lens (see, e.g., column 6, lines 20 – 33 of Kessler), and suggests that Kessler may be combined with AAPA to teach Applicants' claimed invention.

To establish a prima facie case of obviousness, three basic criteria must be met (see, e.g., MPEP § 2143). The first of the three criteria requires there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one skilled in the art, to combine the reference teachings (see, e.g., MPEP § 2143.1). Applicants respectfully submit that this burden as to the first criterion has not been met.

AAPA discloses several prior art imaging apparatuses (see, e.g., Applicants' FIGs. 1, 2). With reference to FIG. 2, Applicants note that AAPA includes an imaging apparatus which has replaced an autofocus lens assembly as illustrated in FIG. 1 with a stationary lens assembly, and note that it has been recognized that such a stationary lens assembly improves over autofocus

assemblies by reducing cost and improving reliability (see, e.g., page 3, lines 1 – 4 of Applicants' specification).

With regard to the present invention, Applicants discovered that image quality in an imaging apparatus of the type disclosed can be adversely affected by variations in the distance between the output ends of the optical fibers and the exposure surface of the drum. Such variation impacts image quality, both by causing variation in image spot size and by causing variation in the lateral distances between image spots. Applicants solved this problem by discovering that a stationary telecentric lens could be used in place of conventional stationary lenses to reduce variation in spot size and lateral distance with variations in the distance between the output ends of the optical fibers and the exposure surface of the drum. (see, e.g., page 13, lines 20 – 25 of Applicants' specification).

While Kessler discloses a laser multibeam printer assembly employing a telecentric lens, Applicants respectfully submit that Kessler fails to teach or otherwise suggest that a telecentric lens may be used to solve the problem solved by Applicants. In sharp contrast to the Applicants' invention, Kessler teaches use of a telecentric lens for the purpose of lowering optical throughput and providing a closer packing of laser spots (see, e.g., column 6, lines 30 – 33 of Kessler). In other words, unlike Applicants invention, Kessler does not teach or suggest the use of a telecentric lens to reduce variations in image quality as are caused by variations in a distance between the output ends of optical fibers and the exposure surface of an image drum.

Applicants amend each of independent claims 1, 11 and 19 to emphasize that Applicants' claimed imaging apparatus and method reduces variance in the distance between exposure spots resulting from variance in the distance between the output ends of the optical fibers and the exposure surface of the drum. Accordingly, Applicants respectfully submit that as there is

insufficient motivation to combine AAPA with Kessler in order to solve the problem discovered by Applicants and produce this claimed effect. Applicants respectfully submit that AAPA and Kessler are improperly combined for the purpose Applicants' invention as claimed in amended claims 1, 11 and 19 obvious, and that amended claims 1, 11 and 19 are therefore allowable. Applicants further submit that as dependent claims 6, 7 and 12 each depend from one of allowable independent claims 1 and 11, claims 6, 7 and 12 are also allowable for at least this reason.

CONCLUSION

An earnest effort has been made to be fully responsive to the Examiner's objections. In view of the above amendments and remarks, it is believed that the present application is in condition for allowance. Passage of this application to allowance is earnestly solicited. However, if for any reason the Examiner should consider this application not to be in condition for allowance, he is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

We respectfully request that all fees relating to this application be charged to Deposit Acct. No. 50-1290.

Respectfully submitted,



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